

Rhodora

JOURNAL OF

THE NEW ENGLAND BOTANICAL CLUB

Vol. 28.

April, 1926

No. 328.

CONTRIBUTIONS FROM THE GRAY HERBARIUM OF HARVARD
UNIVERSITY —NO. LXXVI.

TWO SUMMERS OF BOTANIZING IN NEWFOUND- LAND

M. L. FERNALD

PART I. JOURNAL OF THE SUMMER OF 1924

IN 1910 and 1911 Professor K. M. Wiegand and I spent the collecting seasons in Newfoundland, the first summer on the western, the second on the eastern side of the island. A journal¹ of the trip of 1910, when we were accompanied by Messrs. Joseph Kittredge and Alfred V. Kidder, appeared in RHODORA the following year. On the second trip our companions were Messrs. Edwin B. Bartram and Henry T. Darlington, our center being at Grand Falls on the lower Exploits, whence parties worked eastward to the islands and coves of Notre Dame Bay, southward to the Avalon Peninsula and westward to the headwaters of the Humber; and, although no detailed account of that expedition has been published, the striking contrasts between the floras of the eastern and the western sides of the island have been pointed out.² Again, in 1914, I went to southwestern Newfoundland for a very brief trip, primarily to secure better material of a strange *Euphrasia* which Wiegand, Kittredge and I had got in 1910 on Table Mountain, Port-à-Port Bay. This time I was accompanied by one of my students, now Prof. Harold St. John, and we had only a day and a half on the tableland of Table Mountain. The season was very

¹ Fernald: *A Botanical Expedition to Newfoundland and southern Labrador*, Contrib. Gray Herb. n.s. no. xl., RHODORA, xiii. 109-162 (1911).

² Fernald: *The Contrast in the Floras of eastern and western Newfoundland*. Am. Journ. Bot. v. 237-247 (1918).

backward, so that we failed to get the *Euphrasia*, but, fortunately, many plants not seen in 1910 were in prime condition in 1914. St. John and I were handicapped by so dense a blanket of fog capping the tableland that we quickly got separated and only after hours of discouraging and lonely tussle through pucker-brush did we come together after dark at our temporary camp. But, botanically, Table Mountain lived up to the high standard it had established in 1910 and we brought back 14 additions to the flora of Newfoundland, including the type material of *Carex misandroides* Fernald,¹ *Salix leiolepis* Fernald, *S. myrtillifolia* var. *brachypoda* Fernald, *Antennaria albicans* Fernald and *Arnica pulchella* Fernald.

The success of the expeditions to western Newfoundland began to stimulate others to try their luck and for two summers Messrs. Ludlow Griscom and Kenneth Mackenzie went to Bay of Islands, Port-à-Port Bay and Bay St. George; but, although the West Coast with the Long Range and its western spurs and often calcareous foreland is always alluring, I was growing more and more conscious of the complete inadequacy of our knowledge of some regions near the eastern and southern sides of the island, particularly the area back of Bonaventure and Trinity; the region about Trepassey, near Cape Race; and the southern coast, east of the Long Range. La Pylaie, Despreaux, Steinhauer, Cormack and other early collectors had carried back to Europe or had reported from southern and eastern Newfoundland many species which are characteristic of western Europe and in some cases the evidence of the species in North America rests solely on their collections or records. Some, such as *Juncus bulbosus* L. (*J. supinus* Moench) and *Potentilla procumbens* Sibth., had been rediscovered and are now well known members of the indigenous flora of southeastern Newfoundland. Others of Atlantic Europe, such as *Potamogeton polygonifolius* Pourret, *Glyceria fluitans* (L.) R. Br., *Sieglingia procumbens* (L.) Bernh., *Juncus effusus* var. *conglomeratus* (L.) Engelm. (*J. conglomeratus* L.) and *Montia rivularis* C.C. Gmel., were added to the Newfoundland flora by Robinson & Schrenk in 1894; and others, including *Agrostis canina* L. and *Festuca capillata* Lam., by Howe & Lang in 1901. Waghorne and his associates increased the number by discovering *Ranunculus hederaceus* L. and *R. Flammula* L., and Wiegand and I in 1911 further augmented the list with the large-

¹ In this account the author of the species will be given only at the first mention of the name; afterward omitted.

panicled typical *Deschampsia caespitosa* (L.) Beauv., the delicate pink-flowered *Pedicularis sylvatica* L. and some other species.

Still, some of the reports needed verification: the reputed collection by Despreaux of *Carex remota* L., by La Pylaie of *Juncus acutiflorus* Ehrh., by Steinhauer of *Saxifraga Geum* L., by Cormack of *Arbutus Unedo* L., and by La Pylaie, Cormack and others of *Calluna vulgaris* (L.) Hull. The first two might easily have been misidentified, but surely the last three could hardly be mistaken; and *Saxifraga Geum* and *Arbutus Unedo*, if they should actually prove to be indigenous in Newfoundland, would be almost dramatic in interest. The Saxifrage is one of the most local of European species, belonging to a relic flora which is otherwise confined to the Lusitanian region and to southwestern Ireland; while *Arbutus*, although of broad Mediterranean range, is known north of Spain and Portugal only in southwestern Ireland. Of these remarkable plants Praeger, in his *Tourist's Flora of Western Ireland*, says:

SOUTH-WEST EUROPEAN GROUP.—The characteristic range of the plants of this group embraces Spain, Portugal, SW. France, SW. England and W. Ireland. Two of the constituent species, *Saxifraga Geum* and *Sibthorpia europaea* (the first absent from Great Britain, the second present in S. and W.; both on the Continent confined to the SW.), are in Ireland found only in Kerry and Cork. . . . A third plant of the Kerry group, *Arbutus Unedo*, only differs from *S. Geum* in extending its Continental range all along the Mediterranean.¹

The Newfoundland occurrence of *Saxifraga Geum* rests on a collection recorded by Dr. N. L. Britton, as follows: "There is a specimen of this species in Durand's Herbarium at Paris, collected by the Rev. Mr. Steinhaur, in Newfoundland. It is erroneously labeled by Durand *S. spicata*, Don. This appears to be the first indication of its occurrence in America."² As to *Arbutus Unedo*, the Newfoundland record was by Cormack in his *Narrative of a Journey across the Island of Newfoundland*, the mere note that the shrub occurs "on the summits of the hills" near Bonaventure. Cormack was a keen observer and his plants were presumably identified by Jameson, who surely knew *Arbutus*. There is no shrub in Newfoundland which even a casual observer would be likely to confuse with *Arbutus Unedo*, except possibly *Viburnum cassinoides* L., but Cormack clearly knew the *Viburnum* and wrote of it by name. He may have intended *Arbutus*

¹ Praeger, Tour. Fl. W. Irel. 25 (1909).

² Britton, Bull. Torr. Bot. Cl. xviii. 270 (1891).

alpina (now *Arctostaphylos*) but elsewhere in his *Narrative* he speaks of the latter by its correct name.

Calluna vulgaris, the Heather or Ling, has been many times reported from the southeastern section of the Avalon Peninsula and it was recorded by Sir William Hooker, in a foot-note from the Index of his *Flora Boreali-Americana*, as follows: "This should have been inserted at p. 39, as an inhabitant of Newfoundland, on the authority of De la Pylaie." In the period from 1861 to 1864 many records of *Calluna* as a Newfoundland plant were published, but the most significant was by Seemann:

The doubt still lingering about the occurrence of this plant in America is dispelled by a lucky find of Mr. Hewett C. Watson. Amongst the plants he bought at the sale of the Linnean Society's Collections in November, 1863, there was a parcel labelled outside, "A Collection of Dried Plants from Newfoundland, made by—Mac Cormack, Esq.,¹ and presented to Mr. David Don"; and in this parcel were found two specimens of *Calluna vulgaris*, with the following label:—"Head of St. Mary's Bay; Trepassey Bay also very abundant, S. E. of Newfoundland, considerable tracts of it." These specimens, as far as they go, agree exactly with our European ones, but unfortunately they have no flowers.

Mr. Watson's specimens place it beyond doubt that a plant very closely allied to, if not absolutely identical with the *Calluna vulgaris* of the Old World covers large tracts of Newfoundland . . . it is common in Ireland, Iceland, and the Azores, and its extension to Newfoundland and the American continent is therefore not so much a paradox as a fact, at which we might almost have arrived by induction.²

Somewhat later Watson, himself, gave an account of his discovery, adding in regard to the Cormack package: "The specimens were old, and greatly damaged by insects. Apparently, they had been left in the rough, as originally received from the collector; being in mingled layers between a scanty supply of paper, and almost all of them unlabelled."³ Others proceeded to collect *Calluna* in southeastern Newfoundland and in 1866 Seemann described from cultivated material, said to have come originally from Newfoundland, *Calluna atlantica*,⁴ a species not now generally maintained as distinct from the European *C. vulgaris*; and Reeks, in 1873, wrote: "Through the kindness of the Bishop of N.F.L., I have recently received a liberal supply of this

¹ "Probably W. E. Cormack (supposed to have been a merchant), who made several voyages to Newfoundland. In copying his name 'Mr.' was probably mistaken for 'Mc'."

² Seemann, *Jour. Bot.* ii. 55, 56 (1864).

³ H. C. Watson, *Nat. Hist. Rev.* xiv. 312 (1864).

⁴ Seemann, *Journ. Bot.* iv. 306, t. 53 (1866).

plant in flower. The specimens were gathered near Capelin Bay in about 47° N.L., and 53° West long.”¹

This array of seemingly authoritative data, to which much more might be added, indicating the comparative frequency of *Calluna* in the southern part of the Avalon Peninsula, was a bit irritating to one who had devoted much time to botanical exploration in Newfoundland but who had never seen *Calluna* growing wild; and the less thoroughly attested, though much more thrilling records of the occurrence in the region of *Saxifraga Geum* and *Arbutus Unedo* still further kindled the imagination. And, since Wiegand and I had personally seen, as indigenous plants of southeastern Newfoundland, many European species which are rare or unknown on the continent of North America, I had long felt that the next botanical trip to Newfoundland certainly ought to be to the southeast corner, from Trinity Bay to Cape Race and Trepassey.

Before this plan could be carried out, however, another region of Newfoundland began to assume botanical importance—the south side of the Straits of Belle Isle. The only records which we had had from the Straits were those of La Pylaie from Quirpon, at the extreme eastern end of the Straits, some interesting things but nothing remarkable enough to indicate that the region needed further exploration; and a single record from Flower Cove at the extreme western end of the Straits: *Caltha palustris*, a species common on the West Coast. But when she went to Flower Cove to take charge of the Grenfell hospital there, Miss Mary E. Priest most kindly offered to collect and send to me some plants of the region. These collections, made in Miss Priest's very rare moments of leisure in 1920 and 1921 and mostly from near the hospital, were indeed a revelation: many species such as our representative of *Parnassia palustris* L. and *Lomatogonium rotatum* (L.) Fries, the records of which in Newfoundland had rested exclusively on the authority of La Pylaie a century ago, or of Banks a full half-century earlier (1766); others, like *Festuca vivipara* (L.) Huds., *Salix arctophila* Cockerell, *S. reticulata* L., *Draba megasperma* Fern. & Knowlt. and *Cochlearia tridactylites* Banks, which had been known for the most part from only a single station; and 11 quite new to the flora of Newfoundland: *Eriophorum opacum* (Björnstr.) Fern., a species characteristic of Lapland and the Canadian Rocky Mountain region; *Carex microglochin* Wahlenb., one of the

¹ Reeks, List Fl. Pl. & Ferns of N. F. 4 (1873).

most famous of rarest sedges, here found for the first time in eastern America; a form of *Habenaria viridis* (L.) R. Br., an arctic-alpine orchid of Europe, now recognized for the first time in the flora of North America; *Arenaria peploides* var. *diffusa* Horneman., *Cerastium alpinum* var. *lanatum* (Lam.) Hegetschw., *Alchemilla vulgaris* var. *vestita* (Buser) Fern. & Wieg., *Primula farinosa* var. *incana* (M. E. Jones) Fern. and *Gentiana propinqua* Richardson, these five already known from the Labrador side of the Straits and consequently to be expected; *Statice labradorica* (Wallr.) Hubb. & Blake (var. *genuina* Blake), the first time south of the Torngat region of northern Labrador; *Primula egaliksensis* Wormsk., a Greenland species which has been very poorly if at all represented in American herbaria; and one of the original collections of *Tanacetum huronense* var. *terrae-novae* Fernald.

These collections were thrilling, for Miss Priest was not a trained botanist, her duties at a mission-hospital on a rough coast were exacting and time-consuming and she had to spend much of both summers "on the Labrador"; and the long-dreamed-of plan, that the next Newfoundland expedition should be for Atlantic European types near Cape Race, began to be confused by an equally urgent ambition to go directly to the Straits. The Mt. Logan campaign of 1923 had been organized, however, and Newfoundland field-work had to be postponed until 1924. In 1923, while I was in the mountains of Gaspé, the Biological Board of Canada undertook a survey of the Straits of Belle Isle and the invitation to join in this enterprise reached me too late for action. Consequently, the efficient Director of the Board, Dr. A. G. Huntsman, himself collected such land plants as came his way. He was quite impartial as to whether he collected on the Labrador or the Newfoundland side of the Straits and he disclaimed any technical botanical knowledge or ability to recognize species of special interest. His collection showed, however, that *Primula egaliksensis* and *Gentiana propinqua*, found for the first time in Newfoundland by Miss Priest, were common the whole length of the Straits; that *Phleum alpinum* L., *Poa eminens* J. S. Presl, *Stellaria crassifolia* Ehrh., *Hymenolobus procumbens* (L.) Nutt., *Lomatogonium rotatum* and *Euphrasia arctica* Lange were not so rare as had been supposed; and he had *Rumex occidentalis* Watson and *Erigeron borealis* (Vierh.) Simmons, new to the island (as well as a few additional species from Notre Dame Bay and Bay St. George).

It was, therefore, quite natural, when Messrs. Bayard Long, Boyd

Dunbar and I started from Boston in July, 1924, ostensibly to go to Trepassey and to Bonaventure to search for *Calluna vulgaris* or *atlantica*, *Saxifraga Geum*, *Arbutus Unedo* and other Atlantic European species which might be associated with them, that we began to reason in this fashion: "We shall land at the southwest corner of Newfoundland, at Port aux Basques; the train runs almost half-way to the Straits west of the Long Range before swinging eastward across the island; the "Home" sails every Wednesday evening from Humbermouth for the Straits; consequently, it would be botanically almost a crime 'to not take her' (Newfoundlandish) north 'down to the Straits' over just one trip." Yielding to this and similar reasoning, we began to shift the itinerary. We landed at Port aux Basques early on the morning of Sunday, July 20, and we knew that the "Home" would not sail from the Bay of Islands until Wednesday night; so, after passing the Customs, we hunted up a boarding place at Port aux Basques, Mrs. Ben. Billard's, a clean and comfortable home, Mrs. Billard being a kind and motherly landlady and one of the best cooks we have ever had the pleasure of meeting in Newfoundland—a place we later looked back to with yearning stomachs.

Port aux Basques itself is on a granite outcrop, but a few miles to the east and north rise the sharp gneissic and schistose crests of the Long Range and, remembering that it was only slightly to the north, on the vast Table Mountain of Cape Ray, that Professor A. P. Coleman had found an extensive area of unglaciated summit, we started hopefully toward the southern end of the Table Mountain mass. The great interest of western Newfoundland lies in the fact that, although local glaciers scoured and altered the surface deposits of central and eastern Newfoundland, the high tablelands of the Long Range and the mountains to the west seem largely to have escaped Pleistocene denudation, and that in this region of but slightly glaciated tablelands we find a phenomenal number of highly localized species isolated from the cordilleran area of America, the unglaciated Arctic Archipelago, and regions of Asia, Europe and northwestern Greenland which were outside the later advances of Pleistocene ice. The occurrence of these isolated colonies or of endemic representatives of cordilleran, Asiatic or high arctic types in western Newfoundland had long been occupying my attention, and shortly before leaving Cambridge I had turned in for publication a discussion of the question.¹

¹ Fernald: *Persistence of Plants in Unglaciated Areas of Boreal America* (Mem. Gray Herb. ii). Mem. Am. Acad. xv. No. iii (1925).

We were, therefore, anxious to utilize this opportunity to reach the unglaciated crest of the southern tip of the Long Range.

Long and Dunbar had never been in Newfoundland and, in spite of written and verbal accounts, were really not prepared to find the alpine flora of Mt. Washington growing at sea-level in latitude $47^{\circ} 30'$, there mingled with typical species of the New Jersey Pine Barrens and the southern coastal plain,¹ the latter plants often ascending to the highest mountain-crests. And with these species of such different geographic origin there occur on the mountain-barrens back of Port aux Basques, as elsewhere through the whole breadth of southern Newfoundland, several species which on the continent we consider as introductions from Europe, but which in Newfoundland are clearly indigenous. Thus, in our two days in the field back of Port aux Basques we were constantly finding on the bare ledges *Festuca capillata* Lam. (European) quite as definitely indigenous as the arctic *Diapensia lapponica* L., *Carex rigida* Good., *Loiseleuria procumbens* (L.) Desv. or *Arctostaphylos alpina* (L.) Spreng. with which it grew; while in wetter pockets or on seeping banks the European *Agrostis canina* L. was found as far back and as high (about 1000 feet) on the uncultivated slopes as we had time to ascend, and with it or in similar habitats were the arctic *Carex stylosa* C. A. Meyer and *C. rariflora* Sm. and the Pine Barren *Schizaea pusilla* Pursh, *Lycopodium inundatum* var. *Bigelovii* Tuckerm. or *L. adpressum* Lloyd & Underw. (the latter new to Newfoundland) and, in pools, *Potamogeton confervoides* Reichenb. and *Utricularia geminiscapa* Benj. (*U. clandestina* Nutt.).

The fascination of the lower slopes and barrens, the necessity of properly caring for our collections and the encountering, on our second day, of an impassible mountain-stream, kept us from reaching the unglaciated tablelands. Scattered at all levels on the slopes were colonies of *Luzula campestris* var. *congesta* (Thuill.) Meyer, a plant well known in Eurasia and from British Columbia to southern California but not heretofore in eastern America; and in a bit of hudsonian thicket bordering a seepy bank Long found a small colony of *Mitchella repens* L., the Partridgeberry of the eastern States, for which the Newfoundland record was doubtful. There was only a tiny patch, and the corolla was white and odorless, quite lacking the pink tinge and the delicious fragrance of the plant of the continent. But we found two

¹ See Fernald: *A Botanical Expedition to Newfoundland and southern Labrador*, RHODORA, xiii. 135-162 (1911).

other species which we had not previously thought of as peculiarly fragrant. One was the ubiquitous *Rosa nitida* Willd. This shrub was in such beautiful condition that we yielded to the temptation to put some into our collecting boxes, although herbaria are full of Newfoundland specimens. Opening our boxes in the evening, we were surprised by a delicious and pervading fragrance as of tuberose (*Polianthes tuberosa* L.). This came from the flowers of *Rosa nitida* and our respect for the common rose of southern and central Newfoundland vastly increased. The other peculiarly fragrant plant was the endemic ragged orchis of Newfoundland, *Habenaria lacera* var. *terraenovae* Fernald,¹ a characteristic plant of bog and tundra, with cream-white to crimson-lake flowers and a most delicious fragrance suggestive of lily-of-the-valley, *Convallaria*.

Wednesday morning we were on hand for the departure of the tri-weekly train which was to leave at 8 o'clock for Humbermouth and St. John's. In the old days, when this was the Reid road, jokes about the train and its never crossing the island without getting off the track were endless, but now it is the Newfoundland Government Railway and as we inspected the little engine our Yankee sense of humor was tickled by the symbol: "N. G. Ry." But we got away promptly and in half an hour were making great speed along the rails near Cape Ray when, bang! there was a sudden jolting and crashing. Rushing out the door opposite the vestibule of the dining car, I received a flying kettle of hot oatmeal porridge on my one respectable suit of clothes and slid in the slime off the platform. The poor little N. G. engine was out of sight over the bank and, heaped in ruins on top of it, were the two express, mail and baggage cars, with the tracks ripped up and thrown into fantastic curves. Worst of all, the fireman and mail-clerk had been instantly killed, the engineer was pinned under the wreckage and scalded nearly to death and the brakeman was so firmly wedged between two cars that it took an hour of prying with telegraph poles to extricate him. There was no engine at the Port aux Basques end of the line and it was late in the evening before a wrecking train arrived from the north, and afternoon of the next day before the passengers could be started north and east. We pictured the "Home" as then well on the way to the Straits of Belle Isle and our consciences whispered that we were being punished for yielding to the temptation to abandon Cape Race for the allurements of the opposite corner of

¹Fernald, RHODORA, xxviii. 21 (1926).

the island. But as we approached the Bay of Islands the conductor informed us that the "Home" had run aground in the Straits and that the "Glencoe," substituting for her, was awaiting the arrival of our train at Curling before proceeding north.

The "Glencoe" reached Flower Cove Saturday afternoon and on the wharf we identified Parson Richards, the English Church missionary of the Straits, a rare man to find in such a remote region, cultured, up-to-date and alert. With his aid we quickly found a home at the house of Mrs. John Whalen, mother of many sturdy sons and many times a grandmother, known to all the community as "Aunt Eliza"; and then Parson Richards got his push-cart and, in the generous spirit which we soon learned to expect in him, insisted on helping us trundle our heavy trunks over the ledgy and peaty lane from the wharf to our new home.

The metropolis of the Straits of Belle Isle has its fishermen's houses, its wharves and its warehouses straggling along the shores of three coves at the southwestern entrance to the Straits; French Cove at the southwest, where the harbor, the principal wharves, the custom house, court house, post-office, English church and the stores are located; then, separated from French Cove by Capstan Point, the real Flower Cove, too open to the Straits for a good harbor; then, east of Flower Cove and separated from it by Nameless Point, where another considerable colony lives, comes Nameless Cove. Eastward beyond there, come cove after cove with their respective fishing colonies and their intermediate points: Mistake Cove, Yankee Point, Savage Cove, Savage Point, Sandy Cove (the name changed in these sophisticated days from the older Poverty Cove) and so on to Eddies Cove, then the Long Straight Coast, Big Brook, Boat Harbor, Cape Norman, Cape Onion, Cape Raven, Cape Bauld and, way in the offing, Belle Isle itself. The country back of Flower Cove is almost as flat as an open prairie, consisting of horizontal white limestone which shelves so gradually into the sea as to make navigation extremely ticklish. Inland and southward there is an alternately treeless and woody sky-line, with an occasional low limestone escarpment rising ten or perhaps twenty feet; but the only elevations of note seen to the south of Flower Cove are visible only on the clearest days: Bard Harbor Hill and Doctor Hill (together forming the Highlands of St. John of maps and charts—a name never used by the natives), rising 1900 feet from the shore of St. John Bay.

Our first walk was a stroll after supper around Capstan Point. We were strangers and the young sledge-dogs of the community promptly recognized us as such and, in our inexperience, we were nearly knocked down by the big good-natured puppies all jumping upon us at once and anxious to give us a welcome—or perhaps to get something novel to eat. The drying stages for the cod ran from the houses down to the shore; in many yards great frames covered with stretched and curing seal-skins stood like targets beside the upturned sledges, and tepee-like stacks of logs for firewood, hauled in winter by dog-sledge from the woods five miles back, added further novelty to the picture. Enclosed in high fences in almost every yard were the older dogs, forbidden by Newfoundland law to run free in summer, yelling and snarling in a hundred different tones and keeping up a chorus (the “Labrador band”) from sunset to sunrise. On a submerged ledge at the entrance to Flower Cove lay a big black coal-steamer, the *Njordfjeld*, aground and abandoned with her cargo some years ago, with the result that every family on this coast has a fine stock of anthracite. One devout soul unblushingly said, “We has enough coal for fifteen years and before that time we prays God to bring another wreck to we.” Some of the women and girls were bringing pails of water on shoulder-yokes from the springs outside the village, others were milking the cows, and the men were working on their seal-skins. This was all a new life to us and, when we got outside the little village and felt the stiff north wind blowing right across from the icebergs which had stranded near Point Amour, we began to imagine ourselves in Greenland or in Lapland rather than in latitude 51°.

And this impression was intensified as soon as we saw the solid carpets of color displayed by the arctic plants on Capstan Point: the turf border of the limestone shingle a veritable maze of Greenland and Lapland species, with a good sprinkling of Alaskan or Siberian types and a few species endemic to eastern America to differentiate this from more northern arctic spots. *Salix reticulata* L., with purple-veined orbicular leaves, *S. cordifolia* Pursh, with grayish foliage, *Lonicera villosa* (Michx.) R. & S., grayish and velvety, *Shepherdia canadensis* (L.) Nutt, golden-bronze and silvery, *Arctostaphylos alpina* and *Silene acaulis* var. *exscapa* (All.) DC. formed broad flat carpets through which projected *Botrychium Lunaria* (L.) Sw., *Stellaria longipes* Goldie, the whole plant strongly whitened, *Festuca vivipara*, forming dense clumps with plumes of leafy tufts replacing the in-

florescences, *Primula farinosa* L., with lilac flowers, and dozens of other fascinating species. There were great carpets of *Gentiana nesophila* Holm, like our sky-blue Fringed Gentian but lower and fleshy, and with it the lilac-flowered *G. propinqua* or its close relative, *Lomatogonium rotatum*, with porcelain-blue to white rotate corollas. The handsome plant which had been mistaken for *Parnassia palustris*, but which is separated from the European plant by many characters (to be discussed in Part III.), beautiful with its abundant creamy-white flowers, abounded; the moss-like *Saxifraga cespitosa* L., with erect milk-white flowers, made dense turf; the little "Plumboy," *Rubus acaulis* Michx., was in full bloom, a dwarf herbaceous raspberry, its showy rose-red flowers with a fragrance like that of *Epigaea repens*. *Primula egaliksensis*, which we had been most anxious to see, was unmistakable, with its strictly erect pedicels and white flowers; a little plant with crisp white pubescence, which we took to be *Euphrasia Oakesii* Wettst., the tiny alpine species of the White Mountains, abounded, although insignificant beside the large bushy-branched *E. arctica* and *E. disjuncta* Fern. & Wieg.; and of course there were the inevitable displays of Harebell, *Campanula rotundifolia*, "Wild Tansy," *Achillea Millefolium* var. *nigrescens* E. Meyer, *Anemone parviflora* Michx., *Draba incana* L. and *rupestris* R. Br., *Arabis alpina* L., *Thalictrum alpinum* L., *Cerastium Beeringianum* Cham. & Schl., and many others, every one of them adding to the picture and giving us a new thrill.

Naturally we did not now care whether the "Glencoe" called on the return trip Monday. We had no further interest in her, and Cape Race and Trepassey were far from our thoughts. So we stayed over "just one more" trip—another week; and in all that time, collecting all day and caring for our plants late into the evening, we only once got more than half a mile from the village. The springy swales were full of a very delicate *Epilobium*, with narrowly linear and repand-denticulate leaves and abundant arching basal branches, *E. wyomingense* A. Nelson, heretofore known only from Yukon to Utah; and in all damp thickets or springy slopes *Taraxacum lapponicum* Kihlm. abounded, while another dandelion or "Dumble d'Or" still lingered in flower, a plant with extraordinary rhombic appendages to the long recurving bracts, *T. lacerum* Greene, another cordilleran species which we had not known in eastern America. A stone's throw from the parsonage there was a shallow pool bordered by the snowy white

arctic cotton grass, *Eriophorum Scheuchzeri* Hoppe, which we had not definitely known from Newfoundland, and as we hurried toward it the quality of the turf under foot suddenly changed and we found ourselves in a dense carpet of a strange sedge with short arching culms and dense chestnut-brown heads, *Carex incurva* Lightf., which we had not known south of Cape Chidley at the entrance to Hudson Straits. This exciting little sedge formed compact turf and it took a full hour to dig out and properly to clean the specimens—a task prolonged and rendered difficult because a pack of half-grown puppies discovered us and insisted on competing with our hand-picks in digging the specimens, and then they proceeded to tear to pieces those we had already cleaned. When at last we got to *Eriophorum Scheuchzeri* and pulled in some sods we found that another arctic species, likewise new to Newfoundland, was creeping among the culms, *Ranunculus hyperboreus* Rottb., a tiny plant with 3-lobed leaves and pale flowers and 3 sepals and 3 petals.

We had been particularly looking forward to collecting *Carex microglochlin*, not on account of its beauty, for it looks like a needle with a few scales at the summit, but because it is one of the rarest and taxonomically most interesting of species, having the primitive rachilla, which is obsolete in most modern *Carices*, projecting from the tip of the perigynium; in other words, *C. microglochlin* is an excessively local relic-species now known in only a few remote corners of the globe and about as well placed in the Antarctic genus *Uncinia* as in the great genus *Carex* which abounds in the northern hemisphere. Consequently, when we first came upon this unpretentious but truly aristocratic plant, scattered and rare as we felt it ought to be, we carefully dug the individuals and gently tucked their bristly tops into paper bags that we might lose none of the precious fruits; at that stage we spoke of it by its full name, *Carex microglochlin*, and had a feeling that we ought to give it some title. A little later, finding it more common than the few straws in herbaria could possibly suggest, we began to feel familiar and called it "Mike"; then, as the week wore on and we saw it in every low place in the lime-barrens, we referred to it as "Mike O'Glochlin"; and before we had left the Straits Coast, noticing that it followed many paths where its prickly little fruits had obviously been spread by pedestrians with their high skin-boots, our attitude had completely changed and we spoke of it as "Mike O'Glochlin, the Bootlegger."

Beyond the low escarpment which rises southeast of the harbor is.

the Rock Marsh, a broad barren with alternating areas of tundra, swale, thicket, pond and limestone pavement. Here in the wet depressions abound the curious sedge, *Kobresia simpliuscula* (Wahlenb.) Mackenzie, the pale-headed rush of Greenland and the Canadian Rockies, *Juncus albescens* (Lange) Fernald, the Norwegian and Rocky Mountain cotton grass, *Eriophorum opacum*, the trailing Greenland willow, *Salix arctophila* Cockerell, a species with small lustrous leaves and great black-scaled catkins seeming wholly out of proportion to the size of the shrub. Closely mingled with these and dozens of other choice species were the plebeian Bog Bean, *Menyanthes trifoliata* L., "Indian Jug," *Sarracenia purpurea* L. and "Tobacco Leaf," *Sanguisorba canadensis* L.; and I well remember Long's disgusted remark: "Up here, Bog Bean hobnobs with the best of 'em."

Except for the scattered thickets of spruce and fir we might, when we stepped upon the rock barrens, have been 20 degrees farther north, on the Arctic Archipelago or in arctic Alaska; the rock was deeply rotted limestone pavement, with ragged and long-weathered angular fragments and deep perpendicular-walled chasms. *Salix reticulata*, still fascinating to us, a species of wide arctic dispersal, the strange *S. calcicola* Fern. & Wieg., with sessile reniform to round-cordate leaves, persistent stipules and fat terminal aments, like candles on a candelabra, the eastern representative of the Alaskan *S. Richardsonii* Hook., and the more familiar Lapland Rosebay, *Rhododendron lapponicum* (L.) Wahlenb., the Purple Saxifrage, *Saxifraga oppositifolia* L., and the most widely spread shrub of the Arctic Archipelago, *Dryas integrifolia* Vahl, formed the carpet. In the drier gravel the brown-headed *Antennaria cana* (Fern. & Wieg.) Fern., a western Newfoundland representative of the arctic *A. alpina* (L.) Gaertn., abounded; *Carex rupestris* All. formed close turf and the tiny *C. glacialis* Mackenzie, of arctic Eurasia, Greenland and Alaska, formed characteristic little tufts, as it does the length of the limestone belt of western Newfoundland. In damper gravels or moist pockets in the ledges, the rigid *Equisetum variegatum* Schleich., the yellow-flowered *Saxifraga aizoides* L. and the easily overlooked *Arenaria dawsonensis* Britton were frequent; and we were particularly glad to get good material of *Allium Schoenoprasum* var. *sibiricum* (L.) Hartm., for Wiegand's and my material collected in 1910 was different from the plant of ledgy shores in the northern United States and Canada. This additional material is like all other from western Newfoundland and seems to be

true var. *sibiricum*, the plant of rocky shores across the continent being different in some details to be discussed in Part III.

Returning from the Rock Marsh, we followed a trail which brought us through a springy swale back of the hospital. There, among other interesting things, was a bronze-panicked grass with very contracted inflorescences and large spikelets. At first we took it for a *Deschampsia* but it proves to be *Agrostis melaleuca* (Trin.) Hitchc. of Alaska and mountain-meadows southward in western America.

Daylight in early summer at latitude 51° – 52° is so much longer than we are used to in the latitudes from Boston to Philadelphia that we never knew when to stop work, and many a fisherman and his family there retire in summer at 11 o'clock or later, when it gets dark, and are up at dawn and attending to their cod-traps at 2. We did not have quite their necessity to utilize all the daylight during the fishing season; but one evening, while Long and I were calling on Parson and Mrs. Richards, Miss Fitch, one of the Grenfell workers, came to remind me that I had promised to supply Miss Meister, who was in charge of the hospital during Miss Mahoney's absence, a series of specimens of edible wild plants of the Straits. Accordingly, as it was only 10 P.M., we all started along shore toward the hospital, gathering in the early twilight such edible plants as were available in that short distance: "Alexanders" (*Ligusticum scoticum* L.), "Heltrope" or "Embloch" (*Heracleum lanatum* Michx.), "Goose-tongue" (*Plantago oliganthos* R. & S.), "Cowslip" (*Caltha palustris*), Dock (*Rumex occidentalis* and *R. Patientia* L.), Nettle (*Urtica* sp.), Wild Spinach (*Atriplex glabriuscula* Edmonston), "Dumble d'Or" (*Taraxacum* sp.); and when we reached the hospital we did not really need the cocoa and cakes Miss Meister provided, for each of us had been nibbling one or another of the native salads of the sea-shore: Scurvy Grass (*Cochlearia tridactylites*), Sea Purslane (*Arenaria peploides*), Rose Root (*Sedum roseum* (L.) Scop.) or Sea Rocket (*Cakile edentula* Bigel.). I was urged to write out directions for recognizing and cooking the collection and as fast as I finished one sheet it was copied by several hands, while one or two of the young ladies made drawings of the plants. When we got through there was a limited, illustrated edition, autographed and ready for use by teachers along the coast; but it was 1:30 A.M.! Miss Fitch had to be teaching school four miles away at 9 o'clock, Miss Meister must walk next day sixteen miles with her heavy kit to attend cases at Eddies Cove and we had planned to get an early start on an all-day trip to Sandy (or Poverty) Cove.

(To be continued)